DRAFT

NAVY TRAINING SYSTEM PLAN

FOR THE

TRAILER MOUNTED LIQUID OXYGEN/

NITROGEN GENERATING PLANT

N88-NTSP-A-50-9401/D

APRIL 1999

TRAILER MOUNTED LIQUID OXYGEN/ NITROGEN GENERATING PLANT

EXECUTIVE SUMMARY

The Trailer Mounted Liquid Oxygen/Nitrogen Generator is a self-contained trailer mounted generating plant capable of producing either liquid oxygen or liquid nitrogen, or both simultaneously. When the generator has reached a steady state of operation at ambient conditions, it is capable of producing liquid oxygen and/or nitrogen at a rate of two tons per day. Select overseas Marine Corps and Naval Air Stations use the LOX-30/PLN-430 Liquid Oxygen/ Nitrogen Generator to produce liquid oxygen and nitrogen. These units were procured under a 1976 contract and have reached the end of their service life. The Trailer Mounted Liquid Oxygen/Nitrogen Generator is the designated replacement for the LOX-30/PLN-430 Liquid Oxygen/Nitrogen Generator. Additionally, the Trailer Mounted Liquid Oxygen/Nitrogen Generator will be the replacement for the Marine Corps A/M26U-5 Expeditionary Oxygen/Nitrogen System (EONS) beginning in March 2001.

The Trailer Mounted Liquid Oxygen/Nitrogen Generator is a Non-Developmental Item with preference to Commercial Off-The-Shelf procurement. Developmental Test and Operational Test were completed during the Technical Evaluation in November 1997 at Marine Corps Air Station (MCAS) Cherry Point, North Carolina. Initial Operational Capability was achieved in December 1998. The Material Support Date and Navy Support Date for the Trailer Mounted Liquid Oxygen/Nitrogen Generator is scheduled for second quarter FY01.

The Trailer Mounted Liquid Oxygen/Nitrogen Generator will be operated and maintained at the intermediate maintenance level by Navy personnel of the Machinist's Mate rating with Navy Enlisted Classification 4201 and Marine Corps personnel with Military Occupational Specialty 6075. No additional military manpower will be required. Maintenance technical assistance relative to engineering and logistics support is the responsibility of the Fleet Support Activity (FSA) Naval Air Warfare Center Lakehurst. The planned service life is 15 years.

The initial contract for six Trailer Mounted Liquid Oxygen/Nitrogen Generators was awarded to Pacific Consolidated Industries in April 1996. An option to purchase 12 additional generators was exercised in first quarter FY99. These 12 units will be distributed to Marine Aviation Logistics Squadrons (MALS) 11, 12, 13, 14, 31, and 41.

Initial Training was completed at the Pacific Consolidated Industries factory production sites. Follow-on Training began at Naval Air Maintenance Training Group Detachment, MCAS Cherry Point in March 1999.

TRAILER MOUNTED LIQUID OXYGEN/ NITROGEN GENERATING PLANT

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LIST OF ACRONYMS

AOB	Average On Board
ATIR	Annual Training Input Requirement
CMC	Commandant Marine Corps
CNO	Chief of Naval Operations
FREST	Fleet Replacement Enlisted Skills Training
GPETE	General Purpose Electronic Test Equipment
GPTE	General Purpose Test Equipment
Hz	Hertz
ILSP	Integrated Logistics Support Plan
IOC	Initial Operational Capability
MALS	Marine Aviation Logistics Squadron
MAW	Marine Air Wing
MCAS	Marine Corps Air Station
MM	Machinist's Mate
MOS	Military Occupational Specialty
MSD	Material Support Date
NA	Not Applicable
NAMP	Naval Aviation Maintenance Program
NAMTRAGRU DET	Naval Air Maintenance Training Group Detachment
NAS	Naval Air Station
NATEC	Naval Air Technical Data and Engineering Service Command
NAVPERSCOM	Navy Personnel Command
NAWCADLKE	Naval Air Warfare Center Aircraft Division Lakehurst
NAWCADPAX	Naval Air Warfare Center Aircraft Division Patuxent River
NEC	Navy Enlisted Classification
NSD	Navy Support Date
NTSP	Navy Training System Plan
OPO	OPNAV Principal Official

TRAILER MOUNTED LIQUID OXYGEN/ NITROGEN GENERATING PLANT

LIST OF ACRONYMS

PMA	Program Manager, Air
RFOU	Ready For Operational Use
RFT	Ready For Training
SPETE	Special Purpose Electronic Test Equipment
SPTE	Special Purpose Test Equipment
ST	Special Tool
TD	Training Device
TFMMS	Total Force Manpower Management System
TFS	Total Force Structure
TPD	Tons Per Day
TTE	Technical Training Equipment
ULSS	User's Logistic Support Summary

TRAILER MOUNTED LIQUID OXYGEN/ NITROGEN GENERATING PLANT

PREFACE

This Draft Navy Training System Plan (NTSP) for the Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant updates the Preliminary Draft NTSP, dated February 1999, and has been developed to comply with guidelines set forth in the Navy Training Requirements Documentation Manual, OPNAV Publication P-751-1-9-97. It has been updated to reflect changes in time critical events and revised points on contact.

PART I - TECHNICAL PROGRAM DATA

A. NOMENCLATURE-TITLE-PROGRAM

1. Nomenclature-Title-Acronym. Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant.

2. Program Element. 0204161N

B. SECURITY CLASSIFICATION

1. System Characteristics ..... Unclassified
2. Capabilities ..... Unclassified
3. Functions..... Unclassified

C. MANPOWER, PERSONNEL, AND TRAINING PRINCIPALS

OPNAV Principal Official (OPO) Program Sponsor..... CNO (N881)

OPO Resource Sponsor ..... CNO (N88)

Marine Corps Program Sponsor (if applicable)..... CMC (ASL-36)

Developing Agency..... NAVAIRSYSCOM (PMA260)

Training Agency ..... CINCLANTFLT
CINCPACFLT
CNET

Training Support Agency..... NAVAIRSYSCOM (PMA205)

Manpower and Personnel Mission Sponsor ..... CNO (N12)
NAVPERSCOM (NPC-40, NPC-404)

Director of Naval Training ..... CNO (N7)

Marine Corps Combat Development Command
Manpower Management ..... TFS Division

D. SYSTEM DESCRIPTION

1. Operational Uses. The Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant, from here on referred to as the O2/N2 Generator, is a completely self-contained and portable unit. Mounted on a four-wheel trailer, the O2/N2 Generator has a self-contained power supply by means of a 160-kilowatt diesel powered electric generator. The O2/N2 Generator has a 175 horsepower, 460 volt, three phase, 60-hertz (Hz) motor to drive the air compression unit (the motor is rated at 145 horsepower when used on 380 volt, three phase, 50 Hz power). The O2/N2 Generator is capable of 10 days continuous production of liquid oxygen and/or liquid nitrogen at a rate of two tons per day without plant thaw, with ambient temperatures of negative 25 to 110 degrees Fahrenheit.

2. Foreign Military Sales. Not Applicable (NA)

E. DEVELOPMENTAL TEST AND OPERATIONAL TEST. Developmental Test (DT) and Operational Test (OT) were completed in November 1997 at Marine Corps Air Station (MCAS) Cherry Point, North Carolina. The evaluation team included civilian personnel attached to the Naval Air Warfare Center Aircraft Division Patuxent River (NAWCADPAX) Platform Support Equipment Evaluation/Verification Branch (4.8.12.2) and military personnel attached to Marine Aviation Logistics Squadron (MALS) 14, Naval Air Maintenance Training Group Detachment (NAMTRAGRU DET) 1006, VMAT-203 Fleet Replacement Enlisted Skills Training (FREST) Cryogenics MCAS Cherry Point, 3rd Marine Air Wing (MAW)/Marine Aviation Logistics Squadrons (MALS)-39 MCAS Camp Pendleton, and 3rd MAW/MALS-11 Naval Air Station (NAS) Miramar. Production Approval was awarded in December 1997.

F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED. Currently the overseas air stations use LOX-30/PLN-430 Liquid Oxygen/Nitrogen Generators. They were procured under a 1976 contract and have reached the end of their service life. Additionally, the O2/N2 Generator has been designated as the replacement for the Marine Corps A/M26U-5 Expeditionary Oxygen/Nitrogen System (EONS).

G. DESCRIPTION OF NEW DEVELOPMENT

1. Functional Description. The O2/N2 Generator is a self-contained trailer mounted generating plant capable of generating either liquid oxygen or liquid nitrogen, or both simultaneously. The generator intakes ambient air through an air compression device. The compressed air is then routed to a turbo expander type liquefaction device, where it is liquefied. The liquefied air then is routed to a fractional distillation device where it is separated into high purity liquid oxygen or liquid nitrogen. When the generator has reached a steady state of operation at ambient conditions, it is capable of producing liquid oxygen/nitrogen at a rate of two tons per day.

2. Physical Description

Rated Output

Liquid Oxygen	17.5	gallons per hour
Liquid Nitrogen	24.67	gallons per hour
Total Shipping Weight	16,400	pounds
Width	96	inches
Height	97.3	inches (Transport)
	102.6	inches (Operational)
Length	228	inches
Power	Diesel Engine, 175 HP	

Towing Speed

Primary Highway	20	miles per hour
Unpaved Road	10	miles per hour
Cross-Country	8	miles per hour

Electrical

Trailer Lighting System	24	volts direct current
Generating System	460	volts, three phase, 60 Hz

3. New Development Introduction. The O2/N2 Generator is a new production, Non-Developmental Item (NDI), with preference to Commercial Off-The-Shelf (COTS) procurement.

4. Significant Interfaces. NA

5. New Features, Configurations, or Material. NA

H. CONCEPTS

1. Operational Concept. The annual operating hours are 3,000 hours with a predicted Mean Time Between Failure of 520 operating hours and a Mean Time To Repair of 2.5 hours. The planned service life is 15 years. The O2/N2 Generator will be operated and maintained at the intermediate maintenance level by Navy of the Machinists' Mate (MM) rating with Navy Enlisted Classification (NEC) 4201 and Marine Corps personnel with Military Occupational Specialty (MOS) 6075.

2. Maintenance Concept. The maintenance concept for the O2/N2 Generator reflects the three-level maintenance plan promulgated in the Naval Aviation Maintenance Program (NAMP), Office of the Chief of Naval Operations Instruction (OPNAVINST) 4790.2G. The NAMP prescribes three levels of maintenance: organizational, intermediate, and depot.

a. Organizational. NA

b. Intermediate. The O2/N2 Generator is operated and maintained at this level of maintenance. Intermediate level maintenance consists of preoperational inspections, replacement of consumable fluids, adjustment, cleaning, servicing, preventive maintenance, corrosion inspection and control, fault isolation, and removal and replacement of defective assemblies and components.

(1) Preventive Maintenance

- Preoperational inspections per NAVAIR 19-600-309-6-1
- Servicing of consumable fluids
- Cleaning
- Corrosion inspection and control
- Scheduled Maintenance per NAVAIR 19-600-309-6-2

(2) Corrective Maintenance

- Troubleshooting and fault isolation of discrepancies
- Removal, repair, and/or replacement of Shop Replaceable Units
- Unscheduled maintenance per NAVAIR 19-25D-34 (Operation and Intermediate Maintenance Instruction with Illustrated Parts Breakdown (IPB)

c. Depot. Repair of the components listed below determined to be beyond the capability of intermediate maintenance is accomplished by the Naval Air Warfare Center Aircraft Division Lakehurst (NAWCADLKE) Cryogenics Depot (DRP14).

- Diesel engine
- Air compressor
- Cold box
- Alternator
- Lox circulating pump
- Rapid pressure swing absorber
- Turbo expander
- Refrigeration compressor

d. Interim Maintenance. Maintenance and technical assistance relative to engineering and logistics support is the responsibility of the Fleet Support Activity NAWCADLKE. The Material Support Date (MSD) and Navy Support Date (NSD) for the O2/N2 Generator is scheduled for second quarter FY01.

e. Life-Cycle Maintenance Plan. NA

3. Manning Concept. No additional military personnel are required. The O2/N2 Generator will be operated and maintained at the intermediate maintenance level by Navy personnel within the MM rating with NEC 4201 and by Marine Corps personnel with MOS 6075.

4. Training Concept. The O2/N2 Generator training concept consists of initial and follow-on training. Two separate initial training courses were held at the Pacific Consolidated Industries' California production sites. Follow-on training is held at NAMTRAGRU DET, MCAS Cherry Point, North Carolina.

a. Initial Training. Selected Navy, Marine Corps, contracted government employees, and Naval Air Technical and Engineering Services Command Representatives attended the following initial training in either June 1997 or July 1998.

Title	**2.0 TPD Liquid Oxygen / Liquid Nitrogen Trailer Mounted Plant**
Description	First degree intermediate level operator/maintenance training on the O2/N2 Generator for instructors and cadre maintenance personnel.
Location	Pacific Consolidated Industries, Orange, California
Length	25 days
RFT date	June 1997 (completed)
TTE/TD	NA
Prerequisites	Machinist's Mate NEC 4283, MOS 6075

Title	**2.0 TPD Liquid Oxygen / Liquid Nitrogen Trailer Mounted Plant**
Description	First degree intermediate level operator/maintenance training on the O2/N2 Generator for instructors and cadre maintenance personnel.
Location	Pacific Consolidated Industries, Santa Ana, California
Length	25 days
RFT date	July 1998 (completed)
TTE/TD	NA
Prerequisites	Machinist's Mate NEC 4283, MOS 6075

b. Follow-on Training. Follow-on training for MMs incorporates the O2/N2 Generator course (C-750-3216) in the existing training track M-750-9901 for NEC 4201. Follow-on training for Marine Corps personnel incorporates the O2/N2 Generator course (C-750-3216) in the existing training track M-750-6075 for MOS 6075.

Title	**ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer**
CIN	C-750-3216
Model Manager ..	VMAT-203 FREST
Description	Provides specialized instruction on principles of operation, testing, troubleshooting, and maintenance of the ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant
Location	NAMTRAGRU DET, MCAS Cherry Point
Length	40 days
RFT date	Currently available
Skill identifier	Machinist's Mate / MOS 6075
TTE/TD	O2/N2 Generator is TTE. TD is NA.
Prerequisites	A-651-0053, Machinist's Mate Common Core Class A1

c. Student Profiles

SKILL IDENTIFIER	PREREQUISITE SKILL AND KNOWLEDGE REQUIREMENTS
MM	A-651-0053, Machinist's Mate Common Core Class A1
MOS 6075	A-651-0053, Machinist's Mate Common Core Class A1

d. Training Pipelines. Specific O2/N2 Generator training will be embedded into the existing cryogenic training for NEC 4201 and MOS 6075. The Course Identification Number for the O2/N2 Generator portion of training is C-750-3216.

I. ONBOARD (IN-SERVICE) TRAINING. Operation of the O2/N2 Generator by Navy personnel requires the watchstation operator to be trained specifically on the O2/N2 Generator. Completion of a local OJT syllabus will be required of MMs to obtain final approval to operate the O2/N2 Generator. Marine Corps personnel will not be required to complete onboard In-Service training. Marine training track M-750-6075 contains specific training on the O2/N2 Generator and is considered to be final approval to operate the O2/N2 Generator.

1. Proficiency or Other Training Organic to the New Development

a. Maintenance Training Improvement Program. NA

b. Aviation Maintenance In-Service Training. NA

c. Aviation Maintenance Training Continuum System. NA

2. Personnel Qualification Standards. NA

3. Other Onboard or In-Service Training Packages. NA

J. LOGISTICS SUPPORT

1. Manufacturer and Contract Numbers

CONTRACT NUMBER	MANUFACTURER	ADDRESS
N68335-96-C-0019	Pacific Consolidated Industries	3430 West Carriage Drive Santa Ana, CA 92704

2. Program Documentation. The Integrated Logistics Support Plan, Revision B, was approved 11 December 1997. The User's Logistic Support Summary was approved 12 January 1998. The Maintenance Plan received final approval 11 May 1998.

3. Technical Data Plan. Technical publications were delivered with each unit at the initial three overseas sites. Future deliveries of the O2/N2 Generator to the designated Marine Corps facilities will also include the publications necessary to operate and maintain the O2/N2 Generator.

4. Test Sets, Tools, and Test Equipment. There are no unique requirements for special test sets, special tools, or special test equipment.

5. Repair Parts. The MSD and NSD for the O2/N2 Generator are scheduled for the second quarter FY01.

6. Human Systems Integration. A Human Systems Integration Plan will not be developed for the O2/N2 Generator system.

K. SCHEDULES

1. Installation and Delivery Schedules. The initial contract for six O2/N2 Generators was awarded to Pacific Consolidated Industries in April 1996. Delivery of the initial four O2/N2 Generators to the overseas sites at NAS Sigonella, Sicily; NAS Keflavik, Iceland; and MCAS Iwakuni, Japan, was completed in fourth quarter FY98.

- NAS Sigonella received one unit. Installation was completed early November 1998.

- NAS Keflavik received one unit. Installation was completed in February 1999.

- MCAS Iwakuni received two units. One unit will be temporarily installed in the existing facility. Temporary installation is scheduled for completion in April 1999. A new cryogenic facility is scheduled to be constructed to house both units. Upon completion of construction for the new cryogenic facility, both units will be permanently installed. Date for construction completion of the new facility is unavailable at this time.

- NAMTRAGRU DET MCAS Cherry Point also received one unit. Temporary installation was completed in September 1998. A new High Bay facility for NAMTRAGRU DET, MCAS Cherry Point will be constructed on-site and the unit will be permanently installed upon completion of construction.

An option to the existing contract for the purchase of 12 additional O2/N2 Generators was exercised in first quarter FY99. These 12 units will be distributed to MALS 11, 12, 13, 14, 31, and 41. An exact delivery schedule has not yet been determined, but delivery is scheduled to begin in March 2001 and be completed in September 2001.

2. Ready For Operational Use Schedule. All O2/N2 Generators are considered Ready For Operational Use upon completion of installation and checkout.

3. Time Required to Install at Operational Sites. The O2/N2 Generator is completely self-supporting. Installation at each site varies depending on the site's current housing capability.

4. Foreign Military Sales and Other Source Delivery Schedule. NA

5. Training Device and Technical Training Equipment Delivery Schedule. Technical Training Equipment (TTE) required at NAMTRAGRU DET MCAS Cherry Point was received fourth quarter FY98. Installation was completed in one week.

L. GOVERNMENT-FURNISHED EQUIPMENT AND CONTRACTOR-FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA

M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Trailer Mounted O2/N2 Generating Plant Integrated Logistics Support Plan	I70097021	NAWCADLKE	Approved Dec 97

DOCUMENT OR NTSP TITLE	DOCUMENT OR NTSP NUMBER	PDA CODE	STATUS
Trailer Mounted O2/N2 Generating Plant User's Logistics Support Summary	U70097021	NAWCADLKE	Approved Jan 98
O2/N2 Generating Plant Maintenance Plan	M70097021	NAWCADLKE	Approved May 98

PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by the Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant and, therefore, are not included in Part II of this NTSP:

II.A. Billet Requirements

II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule

II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities

II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

PART II - BILLET AND PERSONNEL REQUIREMENTS

II.A. BILLET REQUIREMENTS

II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: PMA260 **DATE:** 4/1/99

ACTIVITY, UIC		PFYs	FY99	FY00	FY01	FY02	FY03
FLEET SUPPORT ACTIVITIES	NAVY						
NAS Keflavik, Iceland AIMD	44335	1	0	0	0	0	0
NAS Sigonella, Sicily AIMD	44330	1	0	0	0	0	0
MCAS Iwakuni, Japan	62613	1	0	0	0	0	0
TOTAL:		3	0	0	0	0	0
FLEET SUPPORT ACTIVITIES	MARINE						
MALS-14 Cherry Point, NC	09114	1	0	0	0	0	0
MALS-31 Beaufort, SC	09131	1	0	0	0	0	0
MALS-11 El Toro, CA	09111	1	0	0	0	0	0
MALS-12 Iwakuni, Japan	09112	1	0	0	0	0	0
MALS-13 Yuma, AZ	55585	1	0	0	0	0	0
MALS-41 NAS Fort Worth, TX	08944	1	0	0	0	0	0
TOTAL:		6	0	0	0	0	0

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT		BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/ PMOS	SNEC/ SMOS
FLEET SUPPORT ACTIVITIES	NAVY					
NAS Keflavik, Iceland AIMD, 44335						
ACDU		0	1	MM1	4201	
		0	3	MM2	4201	
		0	6	MM3	4201	
TOTAL:		0	10			
***NAS Sigonella, Sicily AIMD, 44330**						
ACDU		0	1	MMC	4201	
		0	1	MM1	4201	
		0	3	MM2	4201	
		0	4	MM3	4201	
TOTAL:		0	9			
***MCAS Iwakuni, Japan, 62613**						
ACDU		0	1	MMC	4201	
		0	2	MM1	4201	
		0	3	MM2	4201	
		0	3	MM3	4201	
TOTAL:		0	9			

* Current TFMMS data reflects the billets at these sites incorrectly require NEC 4283 for the LOX-30/PLN-430 Liquid Oxygen/ Nitrogen Generator being replaced. These billets are presented requiring NEC 4201 for program requirement accountability. Billet information will be updated in future iterations of this NTSP.

FLEET SUPPORT ACTIVITIES	MARINE					
MALS-14 Cherry Point, NC, 09114						
USMC		0	2	CPL	6075	
		0	1	GYSGT	6075	
		0	5	LCPL	6075	
		0	2	SGT	6075	
		0	1	SSGT	6075	
TOTAL:		0	11			
MALS-31 Beaufort, SC, 09131						
USMC		0	2	CPL	6075	
		0	1	GYSGT	6075	
		0	5	LCPL	6075	
		0	2	SGT	6075	
		0	1	SSGT	6075	
TOTAL:		0	11			

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

ACTIVITY, UIC, PHASING INCREMENT	BILLETS OFF	BILLETS ENL	DESIG/ RATING	PNEC/SNEC/ PMOSSMOS
MALS-11 El Toro, CA, 09111				
USMC	0	2	CPL	6075
	0	1	GYSGT	6075
	0	5	LCPL	6075
	0	2	SGT	6075
	0	1	SSGT	6075
TOTAL:	0	11		
MALS-12 Iwakuni, Japan, 09112				
USMC	0	2	CPL	6075
	0	1	GYSGT	6075
	0	5	LCPL	6075
	0	2	SGT	6075
	0	1	SSGT	6075
TOTAL:	0	11		
MALS-13 Yuma, AZ, 55585				
USMC	0	2	CPL	6075
	0	1	GYSGT	6075
	0	5	LCPL	6075
	0	2	SGT	6075
	0	1	SSGT	6075
TOTAL:	0	11		
MALS-41 NAS Fort Worth, TX, 08944				
USMC	0	2	CPL	6075
	0	1	GYSGT	6075
	0	5	LCPL	6075
	0	2	SGT	6075
	0	1	SSGT	6075
TOTAL:	0	11		

II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES

DESIG/ RATING	PNEC/SNEC PMOS/SMOS	PFYs OFF	PFYs ENL	FY99 OFF	FY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
FLEET SUPPORT NAVY ACTIVITIES - ACDU													
MMC	4201		2		2		2		2		2		2
MM1	4201		4		4		4		4		4		4
MM2	4201		9		9		9		9		9		9
MM3	4201		13		13		13		13		13		13
FLEET SUPPORT MARINE ACTIVITIES - USMC													
CPL	6075		12		12		12		12		12		12
GYSGT	6075		6		6		6		6		6		6
LCPL	6075		30		30		30		30		30		30
SGT	6075		12		12		12		12		12		12
SSGT	6075		6		6		6		6		6		6

SUMMARY TOTALS:

FLEET SUPPORT NAVY ACTIVITIES - ACDU		28	28	28	28	28	28	28	28	28	28	28
FLEET SUPPORT MARINE ACTIVITIES - USMC		66	66	66	66	66	66	66	66	66	66	66

GRAND TOTAL:

NAVY ACTIVITIES - ACDU		28	28	28	28	28	28	28	28	28	28	28
MARINE ACTIVITIES - USMC		66	66	66	66	66	66	66	66	66	66	66

II.A.3. TRAINING ACTIVITIES INSTRUCTOR AND SUPPORT BILLET REQUIREMENTS

DESIG RATING	PNEC/SNEC PMOS/SMOS		PFYs OFF	PFYs ENL	FY99 OFF	FY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
INSTRUCTOR BILLETS														
TRAINING ACTIVITY, LOCATION, UIC: NAMTRAGRU DET MCAS Cherry Point, NC, VMAT-203 FREST MCAS Cherry Point														
ACDU														
MM1	4201	9502	0	1	0	1	0	1	0	1	0	1	0	1
USMC														
GYSGT	6075		0	1	0	1	0	1	0	1	0	1	0	1
SGT	6075		0	5	0	5	0	5	0	5	0	5	0	5
SSGT	6075		0	1	0	1	0	1	0	1	0	1	0	1
TOTAL ACTIVITY:			0	8	0	8	0	8	0	8	0	8	0	8

II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs OFF	PFYs ENL	FY99 OFF	FY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
NAMTRAGRU DET MCAS Cherry Point, NC, VMAT-203 FREST MCAS Cherry Point, NC, 66047													
	Navy		0.0		1.0		1.0		1.0		1.0		1.0
	Marine		0.0		1.9		1.9		1.9		1.9		1.9
SUMMARY TOTAL:													
	Navy		0.0		1.0		1.0		1.0		1.0		1.0
	Marine		0.0		1.9		1.9		1.9		1.9		1.9
GRAND TOTAL:			0.0		2.9		2.9		2.9		2.9		2.9

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC / SNEC	BILLET BASE	FY99 +/-	FY99 CUM	FY00 +/-	FY00 CUM	FY01 +/-	FY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM
a. OFFICER - USN	Not Applicable											
b. ENLISTED - USN												
Fleet Support Billets ACDU and TAR												
MMC	4201	2	0	2	0	2	0	2	0	2	0	2
MM1	4201	4	0	4	0	4	0	4	0	4	0	4
MM2	4201	9	0	9	0	9	0	9	0	9	0	9
MM3	4201	13	0	13	0	13	0	13	0	13	0	13
Staff Billets ACDU and TAR												
MM1	4201 9502	1	0	1	0	1	0	1	0	1	0	1
Chargeable Student Billets ACDU and TAR												
		0	1	1	0	1	0	1	0	1	0	1
TOTAL USN ENLISTED BILLETS:												
Fleet Support		28	0	28	0	28	0	28	0	28	0	28
Staff		1	0	1	0	1	0	1	0	1	0	1
Chargeable Student		0	1	1	0	1	0	1	0	1	0	1

II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS

DESIG/ RATING	PNEC / SNEC	BILLET BASE	FY99 +/-	FY99 CUM	FY00 +/-	FY00 CUM	FY01 +/-	FY01 CUM	FY02 +/-	FY02 CUM	FY03 +/-	FY03 CUM
c. OFFICER - USMC	Not Applicable											
d. ENLISTED - USMC												
Fleet Support Billets USMC and AR												
CPL	6075	12	0	12	0	12	0	12	0	12	0	12
GYSGT	6075	6	0	6	0	6	0	6	0	6	0	6
LCPL	6075	30	0	30	0	30	0	30	0	30	0	30
SGT	6075	12	0	12	0	12	0	12	0	12	0	12
SSGT	6075	6	0	6	0	6	0	6	0	6	0	6
Staff Billets USMC and AR												
GYSGT	6075	1	0	1	0	1	0	1	0	1	0	1
SGT	6075	5	0	5	0	5	0	5	0	5	0	5
SSGT	6075	1	0	1	0	1	0	1	0	1	0	1
Chargeable Student Billets USMC and AR		0	2	2	0	2	0	2	0	2	0	2
TOTAL USMC ENLISTED BILLETS:												
Fleet Support		66	0	66	0	66	0	66	0	66	0	66
Staff		7	0	7	0	7	0	7	0	7	0	7
Chargeable Student		0	2	2	0	2	0	2	0	2	0	2

II.B. PERSONNEL REQUIREMENTS

II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer

COURSE LENGTH: 6.0 Weeks **TOUR LENGTH:** 36 Months
ATTRITION FACTOR: Navy: 10% Marine: 0% **BACKOUT FACTOR:** 0.12

TRAINING ACTIVITY	SOURCE	ACDU/TAR SELRES	FY99 OFF	FY99 ENL	FY00 OFF	FY00 ENL	FY01 OFF	FY01 ENL	FY02 OFF	FY02 ENL	FY03 OFF	FY03 ENL
NAMTRAGRU DET MCAS Cherry Point, NC, VMAT-203 FREST MCAS Cherry Point, NC												
	Navy	ACDU		10		10		10		10		10
	Marine	USMC		17		17		17		17		17
COURSE TOTAL:				27		27		27		27		27

PART III - TRAINING REQUIREMENTS

The following elements are not affected by the Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant and, therefore, are not included in Part III of this NTSP:

III.A.2.b. Planned Courses

III.A.2.c. Unique Courses

III.A.3. Existing Training Phased Out

PART III - TRAINING REQUIREMENTS

III.A.1. INITIAL TRAINING REQUIREMENTS

COURSE TITLE: Initial Overseas Liquid O2 / N2 Generating Plant Training
COURSE DEVELOPER: Pacific Consolidated Industries
COURSE INSTRUCTOR: Pacific Consolidated Industries
COURSE LENGTH: 25 Days

LOCATION, UIC	BEGIN DATE	STUDENTS OFF	STUDENTS ENL	STUDENTS CIV		ACTIVITY DESTINATIONS
PCI, Orange, CA	Jun 97		9	7	Input	NATEC Rep USMC (1)
	(Completed)		0.6		AOB	MCAS Iwakuni, Japan (3)
					Chargeable	NAS Keflavik, Iceland (3)
						NAS Sigonella, Sicily (3)
						NAWCADLKE (5)
						NAWCADPAX (1)

LOCATION, UIC	BEGIN DATE	STUDENTS OFF	STUDENTS ENL	STUDENTS CIV		ACTIVITY DESTINATIONS
PCI, Santa Ana, CA	Jul 98		10	4	Input	NATEC Rep USN (1)
	(Completed)		0.7		AOB	NAMTRAGRU DET (1)
					Chargeable	MCAS Iwakuni, Japan (3)
						NAS Keflavik, Iceland (3)
						NAS Sigonella, Sicily (3)
						NAWCADLKE (3)

III.A.2. FOLLOW-ON TRAINING

III.A.2.a. EXISTING COURSES

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer

TRAINING ACTIVITY: NAMTRAGRUDET MCAS Cherry Point, NC
LOCATION, UIC: VMAT-203 FREST MCAS Cherry Point, NC, 66047

SOURCE: Navy **STUDENT CATEGORY:** ACDU - TAR

FY99		FY00		FY01		FY02		FY03		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	10		10		10		10		10	ATIR
	9		9		9		9		9	Output
	1.0		1.0		1.0		1.0		1.0	AOB
	1.0		1.0		1.0		1.0		1.0	Chargeable

SOURCE: Marine **STUDENT CATEGORY:** USMC - AR

FY99		FY00		FY01		FY02		FY03		
OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	OFF	ENL	
	17		17		17		17		17	ATIR
	17		17		17		17		17	Output
	1.9		1.9		1.9		1.9		1.9	AOB
	1.9		1.9		1.9		1.9		1.9	Chargeable

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by the Trailer Mounted Liquid Oxygen/ Nitrogen Generating Plant and, therefore, are not included in Part IV of this NTSP:

IV.A.2. Training Devices

IV.C.3. Facility Project Summary by Program

PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

IV.A. TRAINING HARDWARE

IV.A.1. TTE / GPTE / SPTE / ST / GPETE / SPETE

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer

TRAINING ACTIVITY: NAMTRAGRU DET MCAS Cherry Point, NC
LOCATION, UIC: VMAT-203 FREST MCAS Cherry Point, NC, 66047

ITEM NUMBER	EQUIPMENT / TYPE OR RANGE OF REPAIR PARTS	QTY REQD	DATE REQD	GFE CFE	STATUS
TTE					
001	2.0 TPD LO2/LN2 Generator, Trailer Mount	1	Mar 99	GFE	On board
016	Pump Unit, Rotary-LOX Circulating	1	Mar 99	GFE	On board
017	Plug Assembly, Expander-CTX1	1	Mar 99	GFE	On board
GPTE					
009	Analyzer, Purity, Chemical	1	Mar 99	GFE	On board
010	Mobile LOX 400 Gal TMU-84/E	1	Mar 99	GFE	On board
011	Mobile LIN 400 Gal TMU-84/E	1	Mar 99	GFE	On board
012	Cylinder Assembly, Nitrogen	1	Mar 99	GFE	On board
013	Sample Bottle	1	Mar 99	GFE	On board
014	Cryogenic Sampler	1	Mar 99	GFE	On board
015	Inflator Assembly, Kit	1	Mar 99	GFE	On board
SPTE					
003	Pan Stock Kit	1	Mar 99	GFE	On board
004	Hand Bulb, 160 Inch H2O	1	Mar 99	GFE	On board
005	Hand Bulb, 18 PSIG	1	Mar 99	GFE	On board
006	Pilot Valve Test Kit	1	Mar 99	GFE	On board
007	Stethoscope	1	Mar 99	GFE	On board
008	Tester, Antifreeze	1	Mar 99	GFE	On board
GPETE					
002	Multimeter, Digital 77 B/N	1	Mar 99	GFE	On board

IV.B. COURSEWARE REQUIREMENTS

IV.B.1. TRAINING SERVICES

COURSE / TYPE OF TRAINING	SCHOOL LOCATION, UIC	DATE BEGIN	NO. OF PERSONNEL	MAN WEEKS REQUIRED
Initial Overseas Liquid O2/N2 Generating Plant Training	PCI, Orange, CA	Jun 97 (Completed)	16	60.8
Initial Overseas Liquid O2/N2 Generating Plant Training	PCI, Santa Ana, CA	Jul 98 (Completed)	14	53.2

IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer

TRAINING ACTIVITY: NAMTRAGRU DET MCAS Cherry Point, NC
LOCATION, UIC: VMAT-203 FREST MCAS Cherry Point, NC, 66047

TYPES OF MATERIAL OR AID	QTY REQD	DATE REQD	STATUS
Instructor Guides	60	Mar 99	On board
Material Safety Data Sheet Sets	10	Mar 99	On board
Student Guides	60	Mar 99	On board
Transparency Sets	10	Mar 99	On board

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer

TRAINING ACTIVITY: NAMTRAGRU DET MCAS Cherry Point, NC
LOCATION, UIC: VMAT-203 FREST MCAS Cherry Point, NC, 66047

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR 06-30-501 Oxygen/Nitrogen Cryogenics Systems	Hard copy	2	Mar 99	On board
NAVAIR 19-25D-34 Operation and Maintenance Instructions with IPB (Intermediate, Depot), Generating Plant, Liquid Oxygen/Liquid Nitrogen (2.0 Tons Per Day) Trailer Mount	Hard copy	20	Mar 99	On board
NAVAIR 19-600-309-6-1 Preoperational Checklist Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant 2-Ton, Model ASU2-620RPSA	Hard copy	20	Mar 99	On board
NAVAIR 19-600-309-6-2 Periodic Maintenance Requirements Manual Trailer Mounted Liquid Oxygen/Nitrogen Generating Plant (2 Ton), Model ASU2-620RPSA	Hard copy	20	Mar 99	On board

IV.B.3. TECHNICAL MANUALS

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator/Maintainer

TRAINING ACTIVITY: NAMTRAGRU DET MCAS Cherry Point, NC
LOCATION, UIC: VMAT-203 FREST MCAS Cherry Point, NC, 66047

TECHNICAL MANUAL NUMBER / TITLE	MEDIUM	QTY REQD	DATE REQD	STATUS
NAVAIR A6-332AO-GYD-000 Aviator's Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide	Hard copy	2	Mar 99	On board
NAVSEA S9553-AN-MMC-010 Oxygen/Nitrogen Monitor Servomex Model X540A	Hard copy	20	Mar 99	On board

IV.C. FACILITY REQUIREMENTS

IV.C.1. FACILITY REQUIREMENTS SUMMARY (SPACE/SUPPORT) BY ACTIVITY

CIN, COURSE TITLE: C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer
TRAINING ACTIVITY: NAMTRAGRU DET MCAS Cherry Point, NC
LOCATION, UIC: VMAT-203 FREST MCAS Cherry Point, NC, 66047
REQUIRED RFT DATE: Mar 99

SQUARE FEET SPACE REQUIREMENTS			MAJOR EFR REQUIREMENTS			FACILITIES SUPPORT AVAILABILITY			
ACADEMIC CLASS	LAB	APPROVED CLASS/LAB	(KW) POWER	A/C TONS	OTHER CRITICAL	SPACE AVAILABLE	(KW) POWER	A/C TONS	OTHER CRITICAL
						Partial			

IV.C.2. FACILITY REQUIREMENTS DETAILED BY ACTIVITY AND COURSE

BLDG / ROOM NO	TYPE OF PROJECT	PROJECT NO	REQD AWARD	REQD UCD	REQD RFT	STATUS
					Mar 1999	In Work

CIN, COURSE TITLE:	C-750-3216, ASU2-620RPSA-TM 2.0 TPD Overseas Cryogenic Plant Operator / Maintainer
TRAINING ACTIVITY:	NAMTRAGRU DET MCAS Cherry Point, NC
LOCATION, UIC:	VMAT-203 FREST MCAS Cherry Point, NC, 66047
BUILDING AND ROOM NUMBER:	4293A
TYPE OF FACILITY PROJECT:	Government Contractor
FACILITY PROJECT NUMBER:	98-653241
REQUIRED PROJECT AWARD DATE:	NA
REQUIRED UCD:	NA
REQUIRED RFT DATE:	Mar 99
STATUS:	In-Work – will be completed in Apr 99

PART V - MPT MILESTONES

COG CODE	MPT MILESTONES	DATE	STATUS
DA	Awarded Contract	Apr 96	Completed
DA	Developed ILSP	Apr 96	Completed
DA	Developed Initial Technical Manuals	Oct 96	Completed
DA	Conducted TECHEVAL	May 97	Completed
DA	Conducted Acceptance Testing	May 97	Completed
TSA	Conducted First Initial Training	Jun 97	Completed
DA	Approved Maintenance Plan	Dec 97	Completed
DA	Approved Maintenance Requirements Cards	Feb 98	Completed
TSA	Conducted Second Initial Training	Jul 98	Completed
DA	Approved ULSS	Aug 98	Completed
DA	Delivered First Production Units	Aug 98	Completed
TSA	Attained Initial Operational Capability	Aug 98	Completed
TSA	Delivered TTE	Sep 98	Completed
TSA	Installed TTE	Jan 99	Completed
TSA	Develop Draft NTSP	Apr 99	Completed
DA	Attain Material Support Date	Mar 01	Pending
DA	Attain Navy Support Date	Mar 01	Pending

PART VI - ACTION ITEMS / ACTION REQUIRED

ACTION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS

No actions or decisions are required.

PART VII - POINTS OF CONTACT

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